

TABLE III—TI LIMITS FOR FREIGHT CONTAINERS AND CONVEYANCES

Type of freight container or conveyance	Limit on total sum of transport indexes in a single freight container or aboard a conveyance			
	Not under exclusive use		Under exclusive use	
	Non-fissile material	Fissile material	Non-fissile material	Fissile material ^a
Freight container—Small	50	50	N/A	N/A.
Freight container—Large	50	50	No limit	100. ^b
Vessel: ^c				
1. Hold, compartment or defined deck area:				
Packages, overpacks, small freight containers	50	50	No limit	100. ^b
Large freight containers	200 ^d	50	No limit	100. ^b
2. Total vessel:				
Packages, etc.	200 ^d	200 ^d	No limit. ^e	200. ^e
Large freight containers	No limit ^d ..	No limit ^d ..	No limit	No limit. ^d

^aProvided that transport is direct from the consignor to the consignee without any intermediate in-transit storage, where the total TI exceed 50.

^bIn cases in which the total TI is greater than 50, the consignment must be so handled and stowed so that it is always separated from any package, overpack, portable tank or freight container carrying Class 7 (radioactive) materials by at least 6 m (20 feet).

^cFor vessels the requirements given in 1 and 2 must be fulfilled.

^dProvided that the packages, overpacks, portable tanks or freight containers, as applicable, are stowed so that the total sum of the TI's in any group does not exceed 50, and that each group is handled and stowed so that the groups are separate from each other by at least 6 m (20 feet).

^ePackages or overpacks carried in or on a transport vehicle which are offered for transport under the provisions of § 173.441(b) of this subchapter may be transported by vessel provided that they are not removed from the vehicle at anytime while on board the vessel.

[Amdt. 176-37, 60 FR 50333, Sept. 28, 1995, as amended by 176-37, 61 FR 20753, May 8, 1996; 63 FR 52850, Oct. 1, 1998; 66 FR 45384, 45385, Aug. 28, 2001]

§ 176.708 Segregation distance table.

(a) Table IV applies to the stowage of packages of Class 7 (radioactive) materials on board a vessel with regard to transport index numbers which are shown on the labels of individual packages.

(b) RADIOACTIVE YELLOW-II or YELLOW-III labeled packages may not be stowed any closer to living accommodations, regularly occupied working spaces, spaces that may be continually occupied by any person (except those spaces exclusively reserved for couriers specifically authorized to accompany such packages), or undeveloped film than the distances specified in TABLE IV.

(c) Where only one consignment of a Class 7 (radioactive) material is to be loaded on board a vessel under exclusive use conditions, the appropriate segregation distance may be established by demonstrating that the direct measurement of the radiation level at

regularly occupied working spaces and living quarters is less than 7.5 microsieverts per hour (0.75 mrem per hour).

(d) More than one consignment may be loaded on board a vessel with the appropriate segregation distance established by demonstrating that direct measurement of the radiation level at regularly occupied working spaces and living quarters is less than 7.5 microSieverts per hour (0.75 mrem per hour), provided that:

(1) The vessel has been chartered for the exclusive use of a competent person specialized in the carriage of Class 7 (radioactive) material; and

(2) Stowage arrangements have been predetermined for the entire voyage, including any Class 7 (radioactive) material to be loaded at ports of call enroute.

(e) The radiation level must be measured by a responsible person skilled in the use of monitoring instruments.

(f) Table IV is as follows:

TABLE IV

Sum of transport indexes of the packages	Minimum distance in feet from living accommodation or regularly occupied working space		Minimum distance in feet from undeveloped film and plates																														
			1 day voyage			2 day voyage			4 day voyage			10 day voyage			20 day voyage			30 day voyage			40 day voyage			50 day voyage									
	Cargo thickness in feet (unit density)																																
0.1 to 0.5	Nil	3	Nil	3	6	Nil	3	6	Nil	3	6	Nil	3	6	Nil	3	6	Nil	3	6	Nil	3	6	Nil	3	6	Nil	3	6	Nil	3	6	
0.6 to 1	5	X	6	X	X	8	X	X	11	X	X	17	4	X	25	6	X	35	8	X	42	10	X	50	12	X	55	13	X	59	14	X	
1.1 to 2	6	X	8	X	X	11	X	X	16	4	X	25	6	X	35	8	X	50	12	X	61	14	X	70	17	X	78	19	X	86	20	X	
2.1 to 3	9	X	11	X	X	16	4	X	22	5	X	35	8	X	50	12	X	61	14	X	74	18	X	86	20	X	96	23	X	104	25	X	
3.1 to 5	10	X	14	X	X	19	5	X	27	6	X	42	10	X	61	14	X	74	18	X	86	20	X	96	23	X	104	25	X	112	26	X	
5.1 to 10	13	X	17	4	X	25	6	X	35	8	X	55	13	X	78	19	X	96	23	X	110	26	X	124	29	7	132	31	X	140	32	X	
10.1 to 20	19	4	25	6	X	35	8	X	50	12	X	78	19	X	110	26	X	135	33	8	155	37	9	175	42	10	195	46	11	215	49	12	
20.1 to 30	26	6	35	8	X	50	12	X	69	17	X	110	26	X	155	37	9	190	46	11	220	53	13	250	59	14	280	65	16	310	71	17	
30.1 to 50	32	8	43	10	X	61	14	X	85	20	X	135	32	8	190	45	11	235	56	13	270	65	16	305	72	17	335	79	18	370	87	19	
50.1 to 100	42	10	55	13	X	78	19	X	110	26	X	175	42	10	245	58	14	300	73	17	350	84	20	390	94	22	440	104	23	490	114	24	
100.1 to 150	59	14	78	19	X	110	26	X	155	37	9	245	59	14	350	82	20	430	105	24	515	118	28	550	130	32	600	145	35	(7)	165	39	
150.1 to 200	72	17	96	23	X	135	32	8	190	46	11	300	72	17	425	100	24	525	125	30	600	145	35	(7)	165	39	180	45	(7)	190	45	(7)	
	84	20	110	26	X	155	37	9	200	53	13	350	84	20	490	115	28	600	140	35	(7)	165	40	(7)	190	45	205	49	(7)	230	55	250	
200.1 to 300	105	24	135	32	X	190	46	11	270	64	15	425	105	25	600	145	35	(7)	180	42	(7)	205	49	(7)	235	57	(7)	265	63	(7)	295	71	(7)
300.1 to 400	120	28	160	37	9	220	53	13	310	75	18	500	120	28	(7)	165	40	(7)	205	49	(7)	235	57	(7)	265	63	(7)	295	71	(7)	325	77	(7)

Note:

(1) X—indicates that thickness of screening cargo is sufficient without any additional segregation distance.

(2) By using 6 feet of intervening unit density cargo for persons and 10 feet for film and plates, no distance shielding is necessary for any length of voyage specified.

(3) Using 1 steel bulkhead or steel deck—multiply segregation distance by 0.8. Using 2 steel bulkheads or steel decks—multiply segregation distance by 0.64.

(4) "Cargo of Unit Density" means cargo stowed at a density of 1 ton (long) per 36 cubic feet; where the density is less than this the depth of cargo specified must be increased in proportion.

(5) "Minimum distance" means the least in any direction whether vertical or horizontal from the outer surface of the nearest package.

(6) The total consignment on board at any time must not exceed transport indexes totalling 200 except if carried under the provisions of § 176.704(f). The figures below the double line of the table should be used in such a contingency.

(7) Not to be carried unless screening by other cargo and bulkheads can be arranged in accordance with the other columns.

[Amdt. 176-15, 48 FR 10245, Mar. 10, 1983, as amended by Amdt. 176-37, 60 FR 50334, Sept. 28, 1995]